

MID & UPPER
Sacramento
RIVER

REGIONAL FLOOD MANAGEMENT PLAN

JUST IN TIME TRAINING PROGRAM

Presented To

Coordination Committee of the
Central Valley Flood Protection Board

Presented By:

NOV Elizabeth Avelar, P.E., CFM
April 25th, 2018

April 25th, 2018



RECLAMATION
DISTRICT
108



OVERVIEW

1. Background and Purpose
2. Overview of MUSR Flood Response Tools
3. Existing Training Standards
4. Just in Time Training



BACKGROUND

Mid-Upper Sacramento River Regional Flood Management Plan

- Assess regional flood management needs and long-range improvement plans.
- The flood emergency response component produced a gap analysis and strategic improvement plan.



BACKGROUND

Mid-Upper Sacramento River Flood Emergency Response Project

- **DWR** awarded \$1.2M to the six-county joint application sponsored by Reclamation District 108.
- The goal was to develop regionally consistent and integrated flood emergency response plans, unified flood fight commands, and **training program**.
- Success of MUSR Phase I continued to **MUSR Phase II**



BACKGROUND

Mid-Upper Sacramento River Flood Emergency Response Project

- MUSR Project Phases I and II has been recognized by several professional societies



ASCE Sacramento Section 2016
Outstanding Public Safety Award

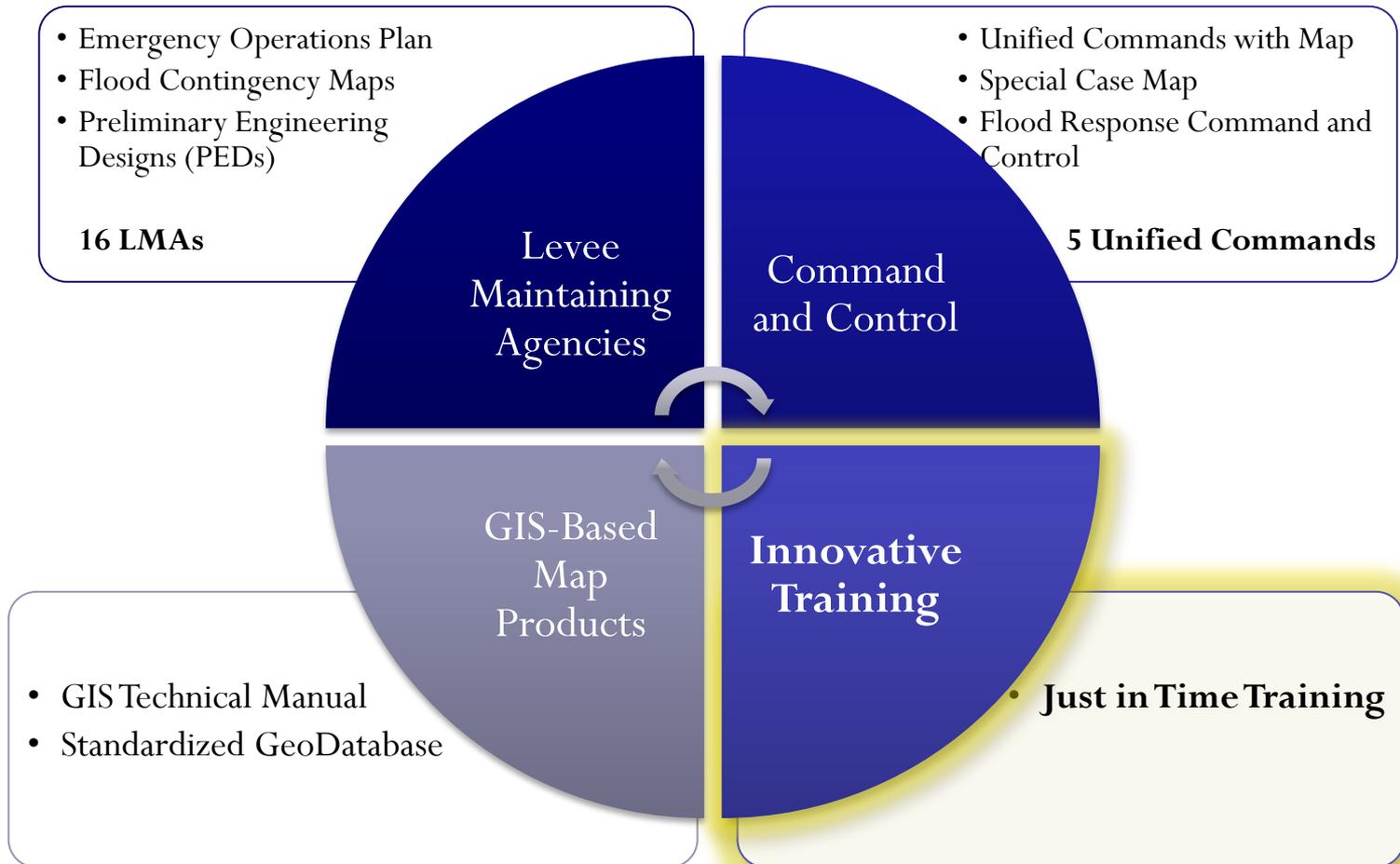


ACEC Sierra Chapter 2016
Engineering Excellence Award
Best Flood Control Project

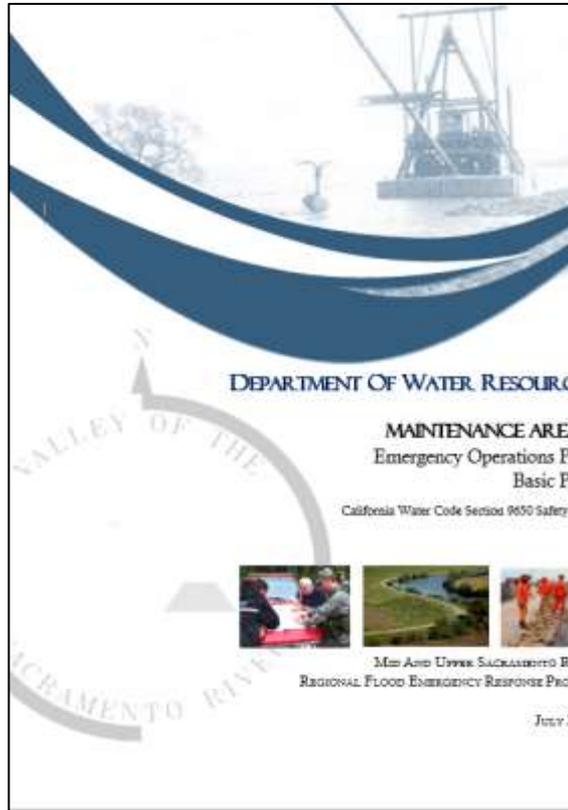
ACEC California 2017
Engineering Excellence Commendation Award



OVERVIEW OF RESPONSE TOOLS

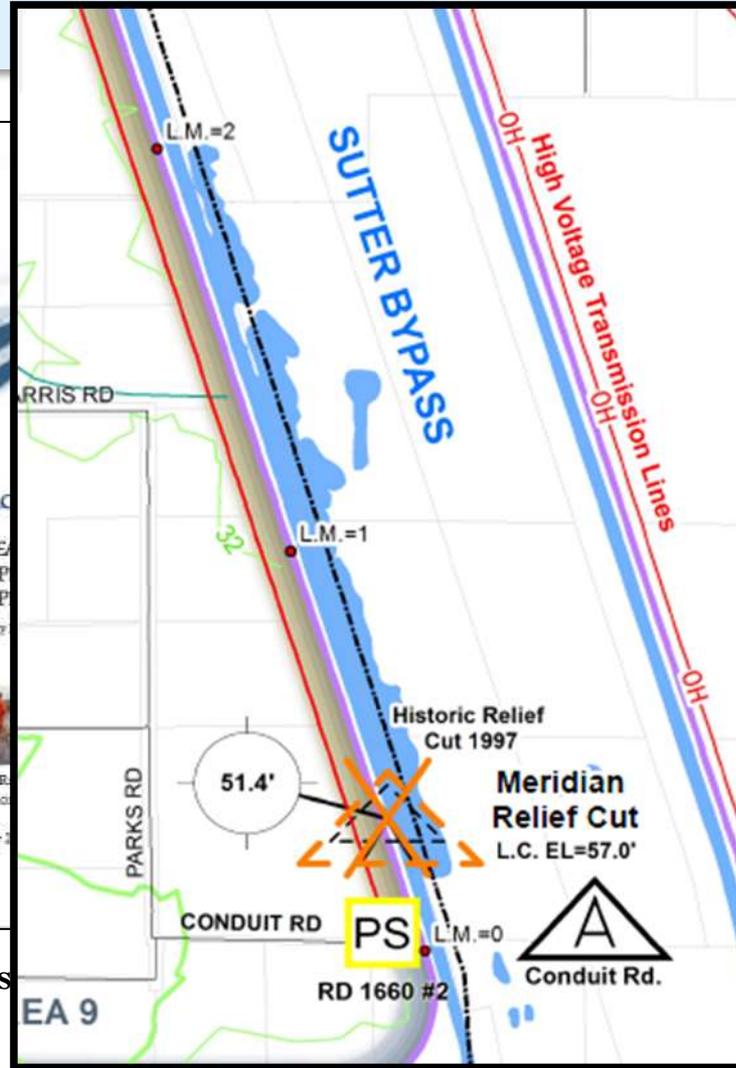


FLOOD SAFETY PLANS



Emergency Operations Plan – Basic

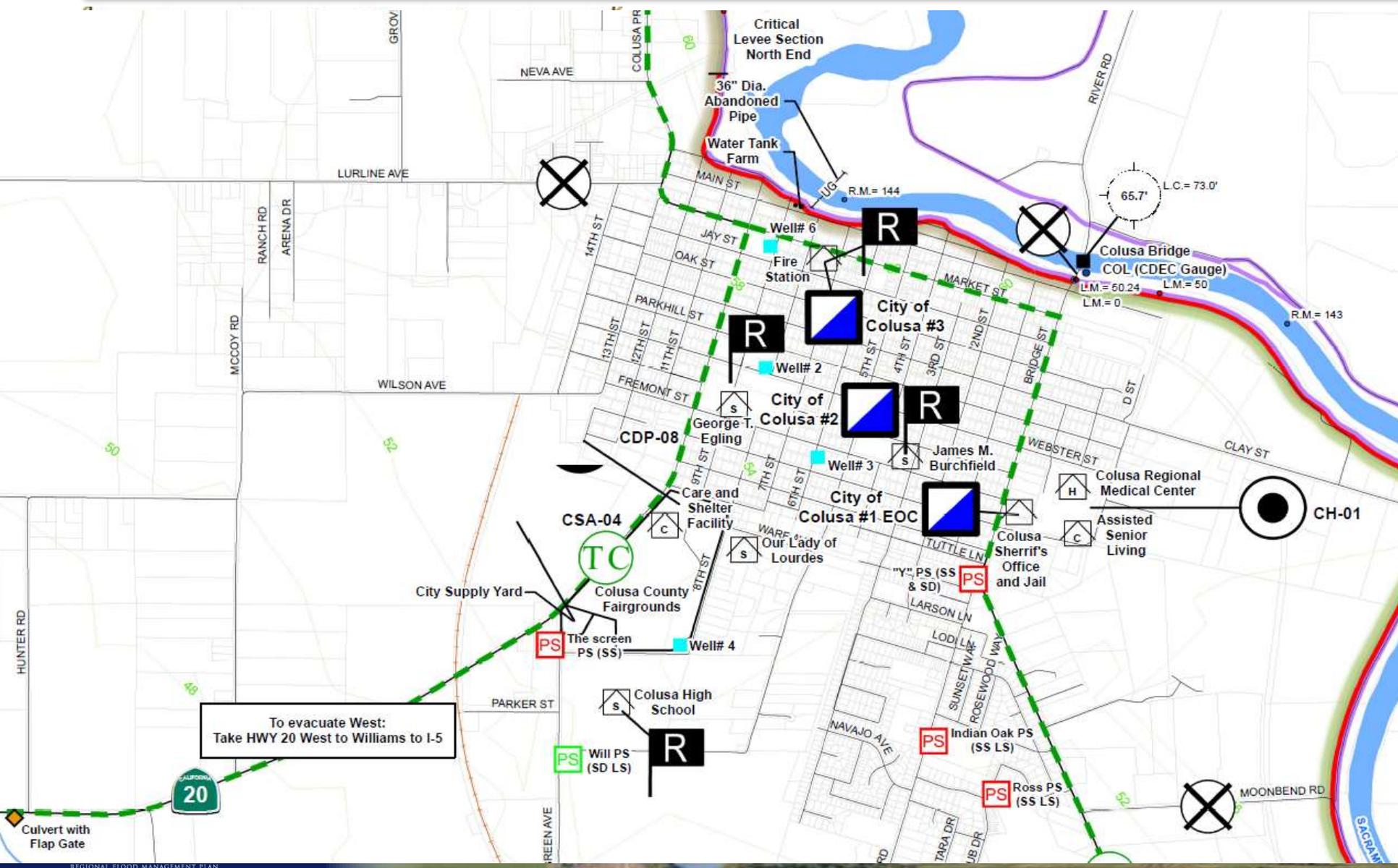
EOP



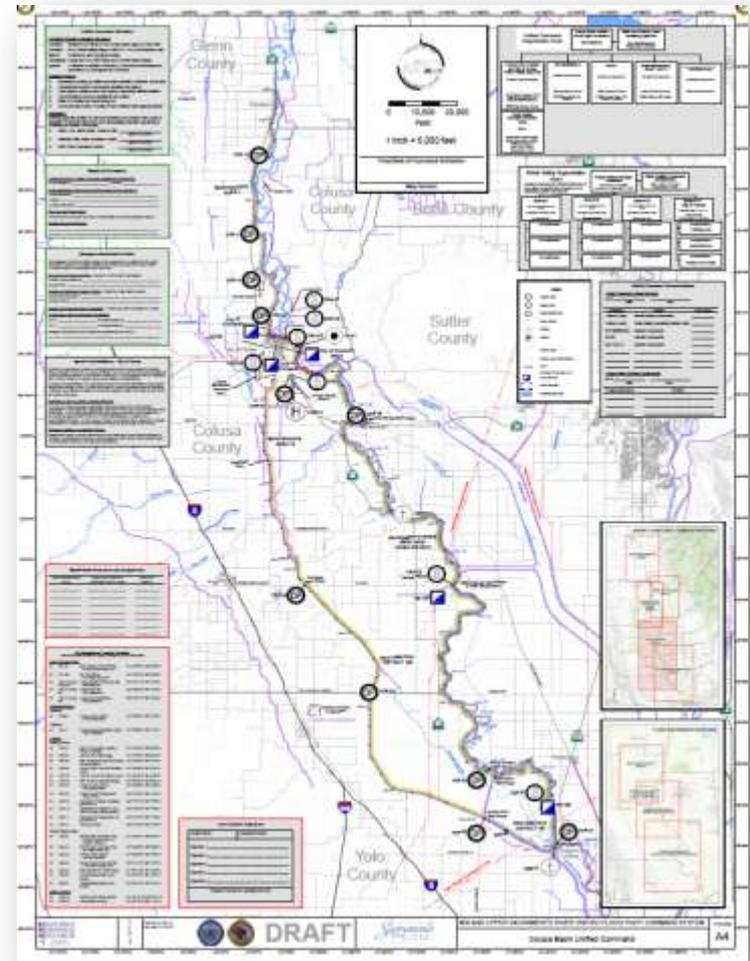
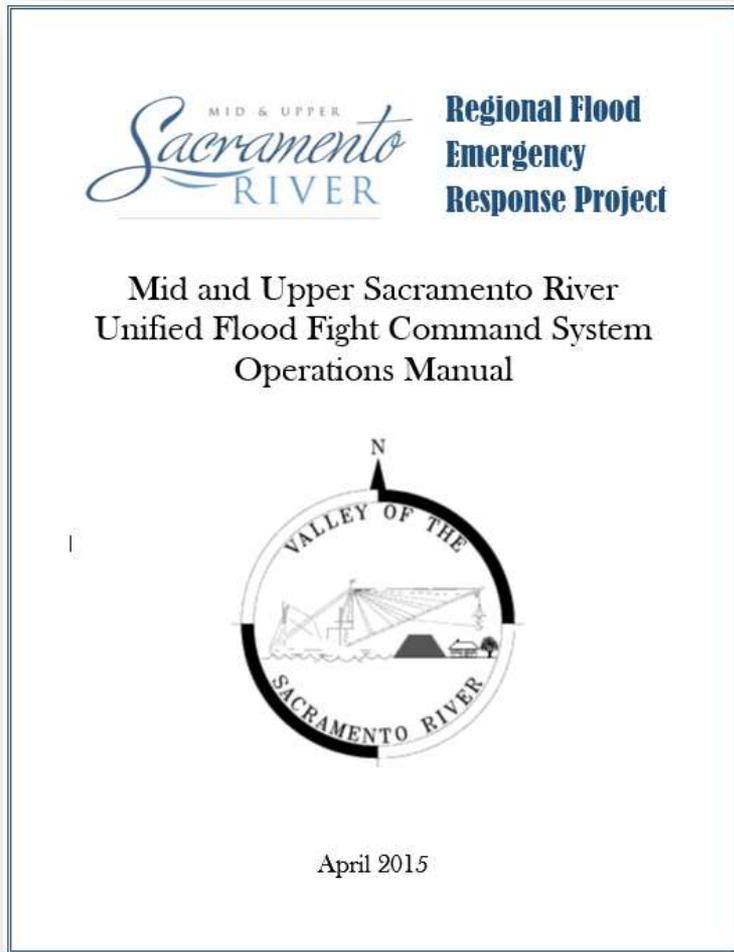
(FCM)



PUBLIC SAFETY SPECIAL CASE MAPS

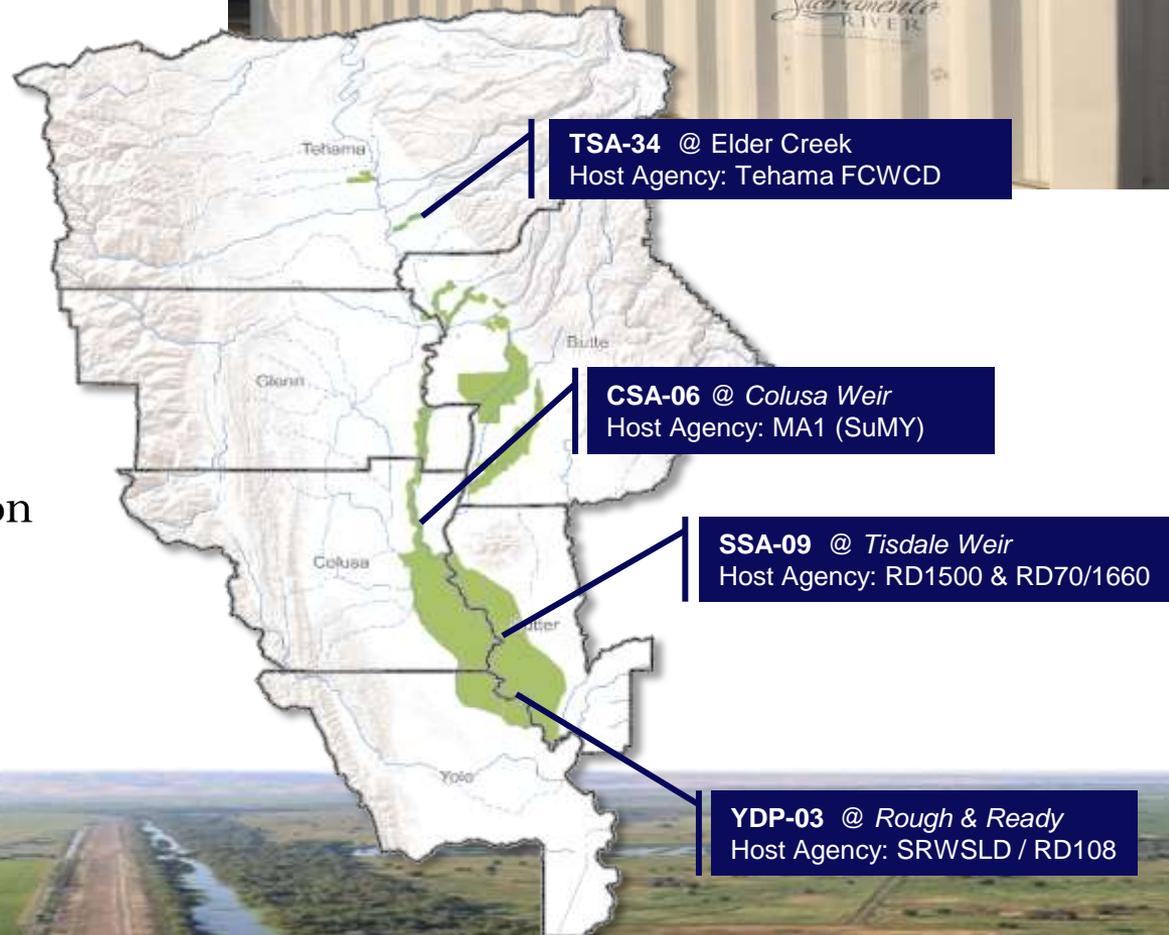
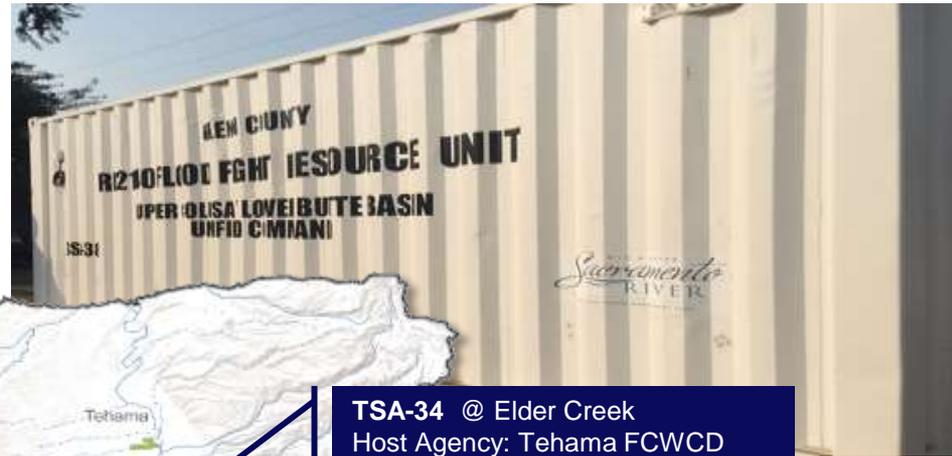


UNIFIED COMMANDS – MAP AND MANUAL



MUSR PHASE II – REGIONAL STOCKPILES

- Purchased fully-stocked ConEx containers for each LMA
- Established MUSR regional stockpile system
- Purchased radios to improve communications among agencies throughout the region



MUSR PHASE II – TABLE TOP EXERCISES

- Combined ICS Training and Table Top Exercise in Fall/Winter 2016
- LMA, County, and State to practice and identify any gaps in procedure
- Develop trust and comfort working together prior to activation



Colusa UC Training / Table Top Exercise



Lower Butte / Upper Colusa Basin UC Training / Table Top Exercise



CONCERNS AND SOLUTIONS

Concern

- LMAs were facing loss of critical historical knowledge, as “grey-haired” local experts begin to retire, and no formal documented procedures for flood emergency response

Solution

- Assisted Levee Maintaining Agencies (LMAs) to document and formalize maintenance and emergency operations procedures
- Established formal triggers, spending authorities
- Documented historical knowledge
- Facilitated information sharing
- Introduced LMAs to SEMS/NIMS
- Developed or reinforced relationship between LMA and County OES



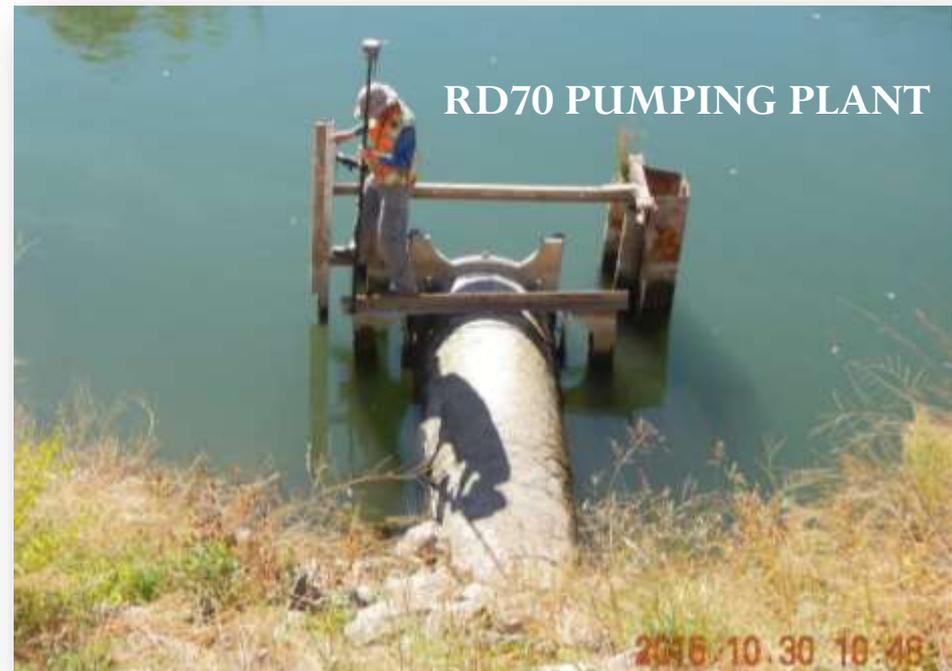
CONCERNS AND SOLUTIONS

Concern

- Critical gauges used to prompt emergency actions, such as beginning patrols, use different reference datums (USED, NGVD29, and NAVD88)

Solution

- Identified critical gauges for the region
- Prioritized gauges and conducted field surveys to convert to NAVD88
- Documented conversion factors within Flood Safety Plans



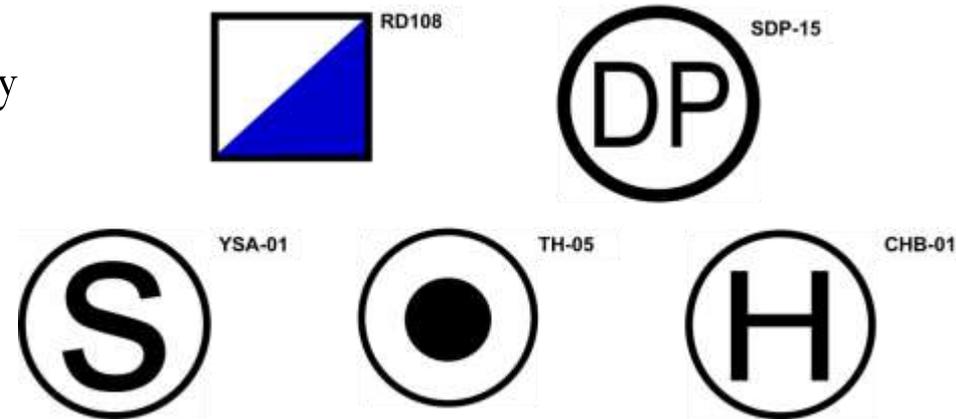
CONCERNS AND SOLUTIONS

Concern

- Inconsistencies in flood response tools could cause confusion during an event, particularly if Mutual-Aid is requested

Solution

- Established regional standards for symbology
- Consistent format across 9 counties
- Documented methods in GIS Technical Manual



CONCERNS AND SOLUTIONS

Concern

- Independent flood fight efforts could be less efficient

Solution

- Used a regionally coordinated approach
 - More Efficient Resource Allocation!
- Process of establishing Unified Commands allowed County, Fire, Law, and LMA staff to consider solutions together
- Gave LMAs confidence to engage in County Emergency Operations
- Provided tools to secure this as an ongoing regional effort



CONCERNS AND SOLUTIONS

Concern

- Difficult to meet and **maintain training standards – 40+ Hours**
 - Staff Turnover (Retirement, New Staff, etc.)
 - Young Staff
 - Long Periods of Time in Between Floods
- Levee Maintaining Agencies (LMAs) have limited staff and resources
- Standard courses are often not applicable or retainable

STANDARD NIMS/SEMS REQUIRED COURSES FOR TYPE 4 INCIDENTS

NIMS/SEMS Required Courses by Position and Function

SEMS-E	ICS 402	IS 100	IS 200	IS 700	DWR Flood Fight Methods (DWR-1)	DWR Levee Threat Monitoring Guidelines (DWR-2)	Review of Local Flood Safety Plan
--------	---------	--------	--------	--------	---------------------------------------	--	--------------------------------------

WHY TRAINING IS IMPORTANT?

1. Safely perform flood fighting and levee patrol functions
 - New Staff
 - Volunteers (e.g., farmworkers)
 - Mutual Aid (e.g., County Dept. of Health)

2. Condition to receive FEMA disaster assistance

CA State: Standardized Emergency Management System (**SEMS**)

FEMA: National Incident Management System (**NIMS**)

DWR: Position-specific training, flood fighting & levee patrols

3. Recognized the challenges of maintaining well-trained staff



MUSR CREATES THEIR OWN TRAINING PROGRAM

GOALS

1. Practical – Can safely perform flood fighting and levee patrols
2. Time Efficient Training
3. Can be completed at the time a flood event is emerging (you know who is there!)
4. Complies with NIMS/SEMS, DWR Flood Fighting protocols, and OSHA

JUST IN TIME TRAINING PROGRAM

Emergency Levee Worker Course

JUST IN TIME TRAINING PROGRAM

Emergency Levee Worker Course

Welcome to the Just in Time Training Program's Emergency Levee Worker Course. This course is designed to provide essential training for the emergency levee worker function where extreme time constraints apply for proper flood emergency response training. This course is composed of five modules comprised of training videos covering subjects are listed below. It is not intended as a substitute for completion of standard training courses that may be recommended by the State or county during non-emergency periods. In addition, the Find Your Flood Safety Plan searchable database allows users within the Mid-Upper Sacramento River Region to look up individual Flood Safety Plans and Maps. Please click on the video you would like to view.



The Emergency Levee Worker

0100 - Introduction

[▶ Play Video](#)

0101 - Basic Duties, Safety, and Worker's Comp

[▶ Play Video](#)

0102 - Levee Patrol Equipment and Procedures

[▶ Play Video](#)

0103 - Helping Document Response Costs

[▶ Play Video](#)

WWW.MUSRFLLOOD.COM

JUST IN TIME TRAINING PROGRAM

0100 The Emergency Levee Worker

0101 Basic Duties, Safety, and Workers' Comp

0102 Levee Patrol Equipment and Procedures

0103 Helping Document Response Costs

0200 Levee Threat Monitoring Guidelines

0201 Levee Terms and Preparing Lathes

0202 Seepage

0203 Boils

0204 Wave Wash

0205 Slope Instability

0206 Cracking

0207 Sink Hole

0208 Erosion

0300 Basic Flood Fight Methods

0301 Basic Flood Fight Methods

0400 Flood Response Organization

0401 National Incident Management System & Standardized Emergency Management System

0402 Regional Multi-Agency Coordination

0403 Incident Command System (ICS)

0404 ICS for the Levee Maintaining Agency

0405 Understanding ICS Tactical Facilities

0406 The Incident Commander Position

0500 The Flood Safety Plan

0501 Purpose, Content, and Use

0502 Understanding Datum and Elevations

Flood Safety Plan Lookup Module

Click on this link to look up information for your levee maintaining agency for subjects discussed in the videos.

STANDARD TRAINING COURSES

- Existing Standard Training Courses— **40+ Hours**

STANDARD NIMS/SEMS REQUIRED COURSES FOR TYPE 4 INCIDENTS							
NIMS/SEMS Required Courses by Position and Function							
SEMS-E	ICS 402	IS 100	IS 200	IS 700	DWR Flood Fight Methods (DWR-1)	DWR Levee Threat Monitoring Guidelines (DWR-2)	Review of Local Flood Safety Plan

- Just in Time Training Program – **4 minute videos, 2.5 Hours**

ALTERNATIVE TO STANDARD NIMS/SEMS REQUIRED COURSES				
JUST IN TIME TRAINING PROGRAM				
100	200	300	400	500
The Emergency Levee Worker	Levee Threat Monitoring Guidelines	Basic Flood Fight Methods	Flood Response Organization	The Flood Safety Plan

MUSR CREATES THEIR OWN REGIONAL TRAINING PROGRAM

GOALS

1. Practical – Can safely perform flood fighting and levee patrols
2. Time Efficient Training
3. Can be completed at the time a flood event is emerging
4. Complies with NIMS/SEMS, DWR Flood Fighting protocols, and OSHA

ACHIEVEMENTS

1. Flood Fight and Levee Patrol Courses
2. 2.5 Hours to complete
3. On-Demand Training Videos
4. Training program streamlined standard courses to make them applicable to LMA-specific needs

JUST IN TIME TRAINING PROGRAM

Emergency Levee Worker Course

SHORT PREVIEW

WWW.MUSRFLLOOD.COM

WIDELY USED DURING THE 2017 FLOODS



JUST IN TIME TRAINING PROGRAM

Emergency Levee Worker Course

CLOSING THOUGHTS

1. MUSR RFMP process provides platform for local agencies to work together;
2. MUSR designed their own flood-specific Just in Time Training Program;
3. Just in Time Training Program takes 2.5 hours to complete;
4. Proven to work – widely used by MUSR and other counties during the 2017 high-water event; and
5. Build upon the success of these videos.



JUST IN TIME TRAINING PROGRAM

Thank you
Questions?

WWW.MUSRFLLOOD.COM

JUST IN TIME TRAINING PROGRAM

Please send comments and suggestions to:

Elizabeth Avelar, P.E., CFM
eavelar@ksninc.com
(916) 403-5900

WWW.MUSRFLLOOD.COM